Chapter 10: Reasonable Progress Goals

Section 10.1 Reasonable Progress Goal Requirements:

The regional haze rule at 40 CFR section 51.308(d)(1) requires states to establish reasonable progress goals (RPG) for each Class I area within the state (expressed in deciviews) that provide for reasonable progress towards achieving natural visibility. In addition, EPA released guidance on June 7, 2007 to use in setting reasonable progress goals. The goals must provide improvement in visibility for the most impaired days, and ensure no degradation in visibility for the least impaired days over the SIP period. The state must also provide an assessment of the number of years it would take to attain natural visibility conditions if improvement continues at the rate represented by the RPG.

The EPA guidance referenced above describes the RPG development process as follows:

> RPGs should be initially developed considering available control measures as evaluated using the statutory factors. Based on emission reductions anticipated from the resulting control strategy for all visibility impairing pollutants, the State should ensure that the RPGs define visibility conditions at, or better than, conditions based on the uniform rate of progress. If a State finds that its initial RPG will not result in visibility improvement equal to or better than the uniform rate of progress, then the State should reconsider available control measures, and additional measures should be evaluated as appropriate. The RPGs should then be revised based upon a more stringent suite of controls.

The "statutory factors" that the state must consider are identified in 40 CFR 51.308(d)(i)(A) as:

a) The costs of compliance,
b) The time necessary for compliance,
c) The energy and non-air quality environmental impacts of compliance, and
d) The remaining useful life of existing sources that contribute to visibility impairment.

The state must demonstrate how these factors were taken into consideration in selecting the goal for its mandatory Class I areas.

10.2: Louisiana Reasonable Progress Goal

The "Uniform Rate of Progress" (URP) named in the EPA guidance (described as uniform rate of improvement in 40 CFR 51.308(d)(1)(i)(B)) and is essentially a line between

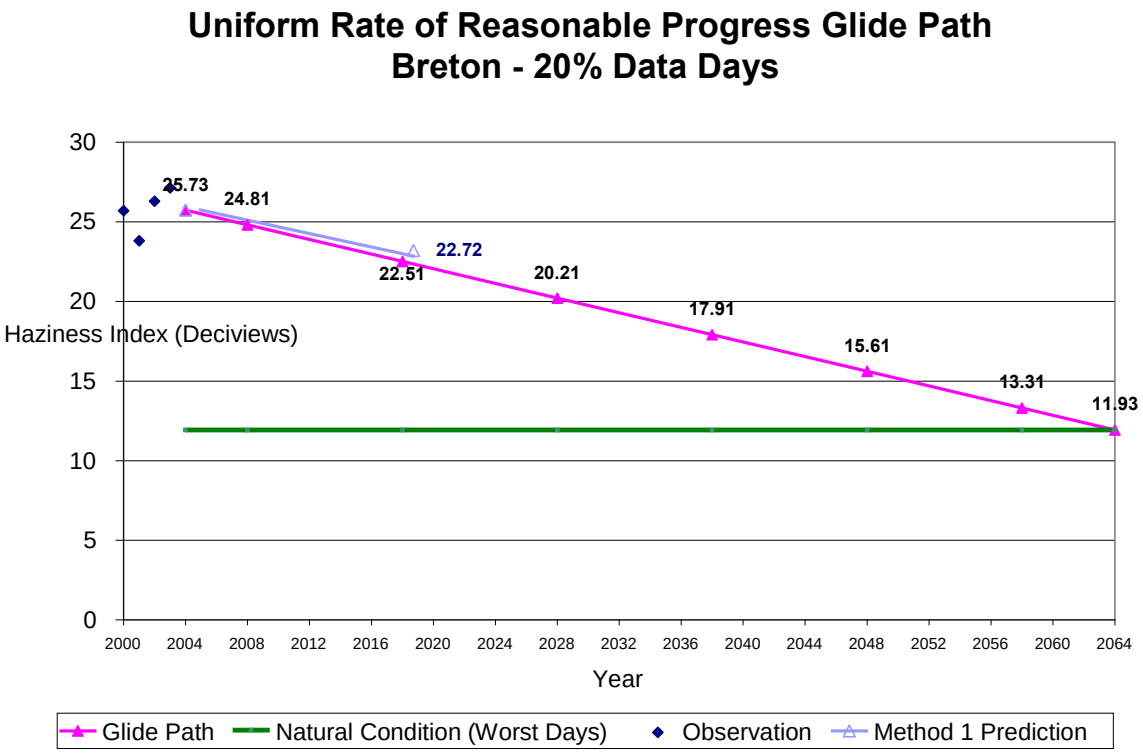
current or baseline conditions on the worst days and natural background in 2064. Table 10.1 provides a Uniform Rate of Progress for the Breton Wilderness Class I Area. The deciview (dv) improvements needed by 2018 are calculated by subtracting the 2018 URP point from the 2000/2004 baseline conditions. Similarly, the dv improvements needed by 2064 are calculated by subtracting the natural background conditions in 2064 from the baseline conditions. Figure 10.1 illustrates the URP glidepath for Breton.

Table 10.1: Uniform Rate of Progress for Breton Wilderness Class I Area

Class I Area	2018 URP Point (dv)	2018 Method 1 Prediction (dv)	Deciview Improvement Needed by 2018 assuming URP	Progress Annually to 2018 assuming URP	Deciview Improvement Needed by 2064
Breton	22.51	22.72	0.21	0.021	13.80

(Deciview value to three decimal places)

Figure 10.1



These RPGs are derived from the CENRAP modeling and reflect emissions reduction programs already in place and additional SO2 reductions from refineries as a result of the EPA refinery consent decrees. The reasonable progress goals were developed after considering the statutory factors: cost and time of compliance, the energy and non-air quality impacts of compliance, and the remaining useful life of existing sources. Appendix H, CENRAP Regional Control Strategy Analysis Plan, provides an analysis showing that these goals are reasonable.

The cost of compliance factor is used to determine whether compliance costs for sources are reasonable compared to the emission reductions and visibility improvement they will achieve. Costs should be determined for one-time capital costs and ongoing annual operations, maintenance and upkeep costs.

Alpine Geophysics produced a report for CENRAP (Appendix H) to identify and prioritize potential regional haze control strategies for Class I areas which were identified as failing to meet visibility goal objectives through modeling. Table 7-4 of this report outlines potential facilities that could be considered when developing a subregional SO2 control strategy with the associated approximate cost. LDEQ can only address those facilities listed within the state's boundaries. The report assumed reduction requirements in tons per year (tpy) of only sulfate and nitrate, and the required emissions reductions would be as follows:

- SO2 emission reductions (tpy) 226,000
- NOx emission reductions (tpy) 572,000

Should Louisiana require emission reductions using the assumption that a single chemical species is controlled, the required emission reductions would be as follows:

- SO2 emission reductions (tpy) 308,000
- NOx emission reductions (tpy) 6,010,000

Based on the extraordinary reductions that would be required if a single chemical species control strategy for NOx were implemented, any new NOx control strategies will have to be extensively reviewed. Louisiana will review the need for further SO2 emissions reduction control measures after all CAIR and federal rules have come into full force and effect.

The circumstances in Louisiana have changed greatly since this report was completed and the department believes the results are no longer appropriate. Several federal consent

decrees have been finalized and their terms have been made public. So the results of the Alpine Geophysics analysis will be used to target candidate facilities (Appendix H, Table 7-4) which could be required to install SO2 and/or SO2 and NOx controls.

Big Cajun 2, an EGU facility, was included in this prioritized list. Since Louisiana is a state affected by CAIR, the facility and all of its units will have to comply with CAIR provisions. The state has incorporated by reference the SO2 cap and trade model rule and the CAIR SO2 SIP was approved on by EPA on June 20, 2007(72 FR 39741). Louisiana estimates that under CAIR, the facility emissions will be approximately 17,900 tpy of SO2, which is a reduction of approximately 39,000 tons or 35% of the current emissions. This estimate assumes that the facility will behave similarly to the way it has complied with the Acid Rain Program in the past and that the reductions will be realized beyond the year 2015. The CAIR cap and trade program was designed to be cost effective and the facility should be allowed to trade under CAIR unrestricted. Requiring the facility to install wet scrubbers on all three units may be cost effective for the Regional Haze Program, however unrestricted trading would be cost effective under the CAIR program. The bottom line: the department expects significant SO2 reductions from Big Cajun 2 because of CAIR and will not require additional reductions for visibility at this time.

The Rhodia facility and the two petroleum refineries that were listed were affected by federal consent decrees which will reduce SO2 emissions by varying amounts. Rhodia's emissions reductions will be 9000 tpy of SO2 and the two refineries will add 3550 tons of SO2 and NOx reductions. If you consider all of the reductions received through the consent decrees (including facilities other than those on the Alpine Geophysics list), Louisiana will see a total of 25,697 tpy in SO2 emission reductions. Coupled with the CAIR program, the SO2 emission reductions reach 68,697 tpy by 2015. Based upon the numbers in the 2002 base year inventory, this equals a 30% reduction. The department will not require additional reductions for visibility from any oil refineries in the state at this time. See Table 10.2.

The last three facilities listed are Cytec/Fortier Plant, DuPont Chemical, and PSC Nitrogen. All three facilities comply with the department's emission standards for sulfur dioxide, LAC 33:III.Chapter 15. Cytec is also subject to NSPS, Subpart H and DuPont Chemical's new permit requires dual absorption technology to be installed by 2009 which should reduce SO2 emissions by over 93%. Dual absorption technology is not a control

technology as such but makes the sulfuric acid manufacturing process more efficient. The department will not require additional reductions for visibility at this time from Cytec and DuPont but it will commit to fully investigating SO2 emissions reductions at PCS Nitrogen. The facility has installed SO2 CEMS for accuracy. See Table 10-2.

The time necessary for compliance factor may be used to adjust the reasonable progress goals to reflect the degree of improvement achievable within the long term strategy period, as opposed to the improvement expected at full implementation of a control measure, it the time needed for full compliance exceeds the length of the long term strategy. Big Cajun 2 and the refineries will be operating controls due to CAIR and consent orders well prior to 2018 and DuPont will be installing dual absorption in 2009. There are no other new controls being implemented, and the time necessary for compliance becomes moot.

The energy and non-air impacts factor is meant to consider whether the energy requirements (the amount, type and availability of energy) of the control technology result in energy penalties or benefits.

The statutory factor of the remaining useful life of the source is applicable only to those measures which would require retrofitting of control devices at existing sources. The remaining useful life of a source affects the annualized costs of retrofit controls and is included in the methods used for calculating annualized costs in the control cost equations modified from EPA's AirControlNET.

The control strategy analysis points out that point sources, both EGU and non-EGU, of SO2 and NOx are the main anthropogenic pollutants that affect visibility at Breton. The next highest source of these two pollutants is area sources. The department will not require emissions reductions from area sources for visibility at this time.

10.3 Consultation

In determining a reasonable progress rate for Breton, LDEQ has consulted with the other states that are reasonably anticipated to cause or contribute to visibility impairment. The participating states are Mississippi, Alabama and Florida. The FLMs and EPA participated in these meetings as well. Notes from the meetings are available in Appendix I.

Furthermore, LDEQ commits to scheduling conference calls and /or meetings to discuss any future visibility impairment possibilities with the EPA, FLM and the states included in the Area of Influence as it pertains to Breton. The department makes the

commitment for the Caney Creek Wilderness Area which is located in southwestern Arkansas.

10.4 Reporting

LDEQ will report progress to the EPA every five years in accordance with 51.308 (g). A complete detail on the five-year reporting and ten-year SIP submittal requirements is included in Chapter 12 of this document.

Table 10-2: Regional Haze SIP Emissions Reductions from CAIR, Consent Decrees and National Refinery Initiatives

Facility	Bart	NOx Reductions (tpy)	SOx Reductions (tpy)
Rhodia, Inc	X		9000
ExxonMobil		1400	50
Chalmette Refining	X	600	1270
Conoco Phillips	X	2898	3402
Conoco Refinery		670	635
Marathon Refinery		2100	
CITGO Refinery		775	6040
Motiva		1300	5300
Total reductions		9743	25697

CAIR Reductions		NOx Reductions	SOx Reductions
Louisiana	by 2015	39000 or 57%	43000 or 41%
Alabama	by 2015	106,000 or 68%	204,000 or 44%
Mississippi	by 2015	35,000 or 74%	Maintain 2003 levels
Florida	by 2015	192,000 or 76%	308,000 or 65%

Louisiana	43000
Alabama	204000
Florida	308000
Total CAIR SO2 reductions	**555000**

Louisiana	39000
Alabama	106000
Florida	192000
Mississippi	35000
Total CAIR NOx reductions	**372000**